



Illinois Department of Natural Resources

One Natural Resources Way Springfield, Illinois 62702-1271
<http://dnr.state.il.us>

Pat Quinn, Governor
Marc Miller, Director

August 24, 2009

Mr. Gary Bingenheimer
Illinois EPA
1021 N. Grand Avenue East
Springfield, Illinois 62702

Mr. Anthony Topf, President
Village of Wonder Lake
4444 Thompson Road
Wonder Lake, IL 60097

**Re: Wastewater Treatment Plant for Thatcher Meadows Development
Wonder Lake
Project Number(s): 0907950
County: McHenry**

Dear Mr. Bingenheimer and Mr. Topf

This letter concerns the Endangered Species Consultation and wetland review for the new Wonder Lake public utility plants and associated infrastructure. These facilities are a major component of the Thatcher Meadows Residential Subdivision and Commercial Development located in Wonder Lake. This project was submitted for consultation in accordance with the *Illinois Endangered Species Protection Act* [520 ILCS 10/11], the *Illinois Natural Areas Preservation Act* [525 ILCS 30/17], and Title 17 *Illinois Administrative Code* Part 1075. The use of state funding requires a wetland review for compliance with the *Interagency Wetland Policy Act of 1989* [20 ILCS 830] and Title 17 *Illinois Administrative Code* Part 1090.

Thatcher Meadows is a proposed residential and mixed-use development located on 1,395 acres in an area north of Illinois Route 120, west of Ringwood Road, south of McCullom Lake Road, and east of East Wonder Lake Road. The project includes 3,700 single and multi-family homes, at least one school, athletic center, public works facility, municipal center, and several commercial businesses. The public utilities and infrastructure component of this project includes the construction of a new potable water supply system and a new waste water treatment plant. Build-out is expected to take at least 24 years, within four separate phases.

The potable water supply system will include: 1) Two 1,300 gpm deep wells, 2) One 750,000 gallon elevated water storage tank, 3) One 500,000 gallon at-grade water storage tank, 4) A Water Treatment Facility including chlorination, ion-exchange equipment and fluoridation, and 5) 16,500 linear feet of distribution main. The wastewater treatment system will include the construction of a 1.0 mgd sewage treatment plant and 13,000 linear feet of sanitary trunk sewer as part of the approved Facilities Plan in the Village of Wonder Lakes Facilities Planning Area (FPA).

Consultation

The project surrounds Harrison-Benwell Conservation Area Illinois Natural Area Inventory (INAI) Site on three sides. This INAI site supports a population of the federally threatened Eastern Prairie Fringed Orchid, *Platanthera leucophaea*, also listed as endangered in Illinois. There are several records for the State-threatened Blanding's Turtle, *Emydoidea blandingii*, within the vicinity of this project as well as a 2008 record adjacent to its northern boundary. Note - pending final approval, the status of Blanding's Turtles will be changed from threatened to endangered this fall.

In a letter dated July 1, 2009, the village contended that this consultation had reached item "h" of the Section 1075.40 Consultation Process. The Department disagrees. Section 1075.40(c) requires the village to complete a "Detailed Action Report" and submit it to the Department. As of today's date the DAR remains incomplete. We still have not received a complete stormwater management plan (including a description of detention basin designs), a recent concept plan (including lot lines, proposed roads), or a Natural Resources Inventory Report. However, with the receipt of five wetland delineation reports on June 18 and the biological survey information for the Eastern Prairie Fringed Orchid *Platanthera leucophaea*, on July 17, the Department has enough information to formulate a biological opinion and develop recommendations to avoid impacts per Section 1075.40(f). Based on the information it has received, the Department has determined that the action is likely to have an adverse impact on Blanding's Turtles and Harrison-Benwell Conservation Area INAI Site and may have an adverse impact on the Eastern Prairie Fringed Orchid. To minimize these impacts, the Department recommends the following measures be incorporated as a condition of any financial support from or through IEPA.

Blanding's Turtles

1. The Department recommends the developer obtain Incidental Take Authorization in accordance with 17 Ill. Adm. Code Part 1080. 'Take' means, in reference to animals and animal products, to harm, hunt, shoot, pursue, lure, wound, kill, destroy, harass, gig, spear, ensnare, trap, capture, collect, or to attempt to engage in such conduct. Several Blanding's Turtle records exist adjacent or near this parcel, and it is likely that individuals use wetlands on site, traverse the site, or nest in upland areas on the site. Turtles could use the area while construction is on-going and after the project is complete. The potential for incidental take is very high for a development project this extensive. It may be possible to utilize the Blanding's Turtle Protection Plan, written by Hey and Associates, as a portion of the ITA conservation plan required by Part 1080.
2. The Department recommends that biological surveys for Blanding's Turtles be conducted within uplands before construction of each phase begins. The best time to survey transiting turtles is between May and July using hoop trapping, visual surveys, and drift fence surveys. Survey results should be forwarded to the Department.
3. The project footprint could contain nesting sites or routes to nesting sites; transiting turtles can be crushed by construction equipment and vehicles. If ITA is not obtained in accordance with Part 1080, the Department recommends the developer only construct in upland areas during turtle hibernation, which occurs from late October through late March. During the turtle's active season, from late March to late October, the developer should install exclusionary fencing to prevent turtles from entering active construction areas. Fencing should be in place and inspected for turtles and any needed maintenance daily during the first two weeks, then weekly throughout the rest of the construction period. The fencing should surround the *current work site* to prevent turtles from entering construction zones.

4. The project footprint contains numerous wetlands that may be used for breeding, feeding and hibernation by Blanding's Turtles. The Department recommends biological surveys be conducted within these wetlands before commencing work within or around them. Survey results should be forwarded to the Department.

5. Current plans will result in the destruction of (non-farmed) wetlands 3, 4, 8, 22, 23, 24, or 30. The Department recommends that biological surveys of these wetlands be conducted prior to the commencement of any construction activities for each phase of this development if the destruction of these wetlands is unavoidable.

If turtles are found, the Department and the McHenry County Conservation District (815/653-2297), should be notified immediately so the turtles can be relocated. On-site personnel should watch the turtle until the proper authority arrives to alleviate the situation, keeping at a respectable distance. If the turtle moves, crews should mark the spot they first saw the turtle and the last spot it was seen.

If no turtles are found, or after turtles have been relocated, take measures such as installing exclusionary fencing to prevent any future use by Blanding's Turtles.

6. The Department recommends the developer install mountable, molded curbs rather than the standard 6" vertical curbs. Mountable curbs allow turtles to move freely to and from aquatic areas. If curbs must be used, 4" high curbs at a 3:1 slope are preferred. Other species (such as frogs, toads, snakes, mammals, etc.) will also benefit from mountable curbs.

7. The Department recommends trenches and excavations be covered each evening and inspected each morning to ensure that no turtles have become trapped. MCCD and the Department should be immediately notified if any turtles are trapped so further instructions can be received.

8. The Department recommends the developer alter site plans to include at least one contiguous, naturalized corridor within each of the three primary drainage paths, bordered by exclusionary curbing, between wetland and upland areas to ensure safe passage and lessen turtle road mortality.

9. The Department recommends the developer install flat-bottomed, well-lit culverts that are at least 36" in diameter to provide for safer turtle passage.

10. The Department recommends the developer install basking logs within detention basins and wetlands to assist turtles in achieving optimum body temperatures needed for egg development.

11. The Department recommends the developer provide turtle informational packets to homeowners, renters, and educators and children at the school(s). Informational signs about Blanding's Turtles should be placed within wetland buffers and near detention basins to educate residents, guests, and students. Turtle crossing signs along streets, from April to October, could also minimize road mortality – a major reason this species is threatened. At a minimum, information should emphasize that the species is threatened (soon to be designated endangered) and that it is a criminal act to handle the turtle. It should list who to notify if any individuals are encountered (MCCD and IDNR), and include color photos of an adult and juvenile.

12. The Department recommends the developer require education of construction crews and on-site personnel about Blanding's turtles before any work commences, that personnel receive a copy of the conservation plan, and attend a pre-construction meeting so all crews understand how to legally respond to encounters. Further, a handout similar to Exhibit 1 in the Blanding's Turtle Protection Plan should be posted at construction areas. If a turtle is encountered on site, crews should immediately cease work and

contact MCCD and the Department. Crews should watch the turtle until the proper authority arrives, ‘keeping at a respectable distance.’ If the turtle moves, crews should mark the spot they first saw the turtle and the last spot it was seen.

Eastern Prairie Fringed Orchid (EPFO)

1. This listed plant has a 1998 record within Harrison-Benwell INAI site. Surveys for EPFO within the project’s footprint were conducted in all wetlands (except farmed wetlands) for three days in July 2009 by Hey and Associates staff. The 2009 Surveys identified no orchids. However, the USFWS has noticed that in northeastern Illinois orchid populations “bloom sporadically rather than all plants blooming at the same time. Because of this pattern, and small population numbers, it is possible to conduct an orchid search and not detect orchids even when they are present.” The possibility exists that once on-site wetlands are restored, hydrology improved, and pollutant loads lessened, this species may re-establish itself either within the INAI or Thatcher Meadows. The Department recommends annual surveys during the bloom date of this orchid, June 28 – July 11, with searches conducted a minimum of three non-consecutive days within this timeframe. Results of the annual surveys should be forwarded to IDNR and MCCD.

2. The only confirmed pollinator of the EPFO is the night flying hawkmoth, Hermit sphinx, *Sphinx eremites*. Its caterpillar’s (larvae) host plants are Beebalm (Monarda), Bugleweed (Lycopsis), Mints (Mentha), and Sage (Salvia). The Department recommends planting these flowers within neighborhoods close to Harrison Benwell, and near wetlands that could have appropriate habitat for EPFO, which may increase populations of hermit sphinx numbers which may increase natural pollination of this orchid.

3. Street lights and flood lights in subdivisions and commercial lots draw night-flying insects, such as the EPFO pollinator Hermit sphinx, in and away from their normal locations, impacting the food availability of nocturnal predators and degrading ecological conditions in natural areas. Depending on their color, lights have different effects on insect attraction; red-orange spectra attract fewer insects than blue-green spectra. The Department recommends motion sensor lighting around homes to limit time lights are left on at night and shielded down lighting to limit spill and glare of peripheral light for commercial businesses. In addition, the Department recommends discouraging the use of bug zappers because they kill insects other than mosquitoes.

4. The Department recommends creating and distributing a public information brochure for homeowners that describes the relationship of this insect with the flower, and recommends limited or no insecticide use in yards, wetlands, and buffers. For further information, see the Eastern Prairie Fringed Orchid Recovery Plan, Region 3 USFWS.

Harrison Benwell INAI Site & Wetland 28 Long Term Management Plan

1. The Department recommends incorporating conservation design measures and general principles of soil erosion and sediment control, similar to those recommended by the McHenry County Soil and Water Conservation District in their Natural Resources Information Reports, into project plans.

2. The Department recommends creating an undeveloped buffer adjacent to Harrison-Benwell and the Wetland 28 restoration project to improve water quality measures and provide additional safety to residents and their property during prescribed fire management activities. Approximately 40 lots between neighborhoods N-21(8), N-9 (11), and N-10 (21) could serve as an appropriate undeveloped buffer area.

3. The Department recommends educating and encouraging landowners, renters and others to minimize the application of herbicides, fertilizers, insecticides and fungicides. The management of turf grasses frequently entails the use of broad-spectrum broadleaf herbicides, fertilizers, insecticides for grub and

mite control, and, in some cases, fungicides. Over-application of these chemicals is frequent by homeowners and management alike, since contractors seldom base application rates on adequate soil-testing or a pest census. All pesticides are toxins, most of them quite deadly to fish and aquatic organisms, while many fertilizers are water-soluble, and any increment which cannot be used by the turf will be leached or washed away in storm water. The result is frequent damage to the vegetation in and around detention basins, higher nutrient loading, and poor water quality (algal blooms) which is then transferred to downstream waters. However, municipalities are pre-empted from exercising any regulatory control over the application of pesticides by the *Illinois Pesticide Act* [415 ILCS 60].

4. The Department recommends monitoring and repairing erosion and sedimentation control measures on a daily basis due to the proximity of sensitive wetland communities and species in the vicinity of this project.

5. The increase in roads and driveways from this development will result in an increase in the use of road salt in winter months. In addition, the use of water softening salts will most likely increase as well. These salts could adversely impact vegetation in the wetlands and downstream aquatic communities. The Department recommends developing a salt use plan that minimizes the use of road salts and considers alternatives, such as measures the county uses (i.e., treating road pavement with a beet compound that prevents snow and ice from sticking, and using anti-icing measures before snow or ice can accumulate).

6. The Department recommends stormwater treatment systems in parking lots include state of the art Continuous Deflective Separator systems to assist in the separation and capture of sediments, contaminants, and oils.

7. The Department recommends the Homeowner's Association retains a qualified environmental consulting firm to facilitate and implement the Long Term Management Plan.

Consultation on the part of the Department is terminated. In accordance with 17 Ill. Adm. Code 1075.40(h), the IEPA must notify the Department of its decision regarding these recommendations, whether they will:

- Allow the action to proceed as originally proposed;
- Require the action to be modified per Department recommendations (please specify measures, if not all will be required); or
- Forgo the action.

This consultation is valid for two years unless new information becomes available that was not previously considered, the proposed action is modified, or additional species, essential habitat, or Natural Areas are identified in the vicinity. If the project, or any of its phases, has not been implemented within two years of the date of this letter, or any of the above listed conditions develop, a new consultation is necessary. Thus, future phases will need to come back in for consultation if construction on each phase has not commenced within the 2 year time frame.

The natural resource review reflects the information existing in the Illinois Natural Heritage Database at the time of the project submittal, and should not be regarded as a final statement on the site being considered, nor should it be a substitute for detailed site surveys or field surveys required for environmental assessments. If additional protected resources are encountered during the project's implementation, you must comply with the applicable statutes and regulations. Also, note that termination does not imply IDNR's authorization or endorsement of the proposed action.

Wetland Review

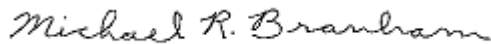
Constructing a potable water treatment plant, wastewater treatment plant, and associated infrastructure will allow the 1,395-acre parcel to be developed. The development will ultimately cause the destruction of 29.77 acres of state jurisdictional wetland. Per Part 1090.60, an alternatives analysis must be conducted that demonstrates the activity minimizes alteration or impairment of the wetlands and their associated buffer areas. An analysis of the potential for hydrologic changes to other wetlands in the complex that are not directly impacted by the development is also needed. Hydrologic impacts also require mitigation.

The attached Table lists the wetlands that will be directly impacted according to current plans and the range of mitigation that could be required by the IWPA. The range of mitigation is dependent on several factors. For example, if Wetlands 3, 4, 8, 22, 23, 24, or 30 contain essential habitat for the Blanding's Turtle, mitigation will be a 5.5:1 ratio. Note, however, that the ultimate mitigation acreage will include only that which is over and above the amount required by McHenry County. For example, if McHenry County requires 50 mitigation acres and the IWPA requires 85 acres, the additional acreage to comply with the IWPA would be 35 acres.

Also be aware that if the currently farmed wetlands are allowed to go fallow, wetland vegetation could be reestablished, making them attractive to Blanding's Turtles. If turtles are found to use these wetlands, mitigation will be at a 5.5:1 ratio. The attached table does not reflect this higher ratio. (Farmed wetlands are exempt from the IWPA as long as they remain in agricultural use.)

The wetland review remains open pending the receipt of the alternatives analysis and the hydrologic analysis. Once all unavoidable wetland impacts have been identified, a Wetland Compensation Plan will be required. Please call me if you need further explanation.

Sincerely,



Michael R. Branham
Division of Ecosystems and Environment
217-785-5500

Impacted Wetlands and Range of Possible Mitigation
(as of August 24, 2009)

Wetland Number	Size Acres	Acres Impacted	Ratio	Acres Mitigation (Mit. Site ≤ 1 Mile)	Ratio	Acres Mitigation (Mit. Site > 1 Mile, Same Basin)	Ratio	Acres Mitigation (Listed Species, Essential Habitat, or Out of Basin Mit.)
3**	0.75	0.75	1.5:1	1.125	4.0:1	3.00	5.5:1	4.125
4**	0.41	0.41	1.5:1	0.615	2.0:1	0.82	5.5:1	2.255
8**	0.14	0.14	1.5:1	0.21	2.0:1	0.28	5.5:1	0.77
10*	0.07	0.07	1.5:1	0.105	2.0:1	0.14	3.0:1	
11*	0.05	0.05	1.5:1	0.075	2.0:1	0.10	3.0:1	
12*	0.03	0.03	1.5:1	0.045	2.0:1	0.06	3.0:1	
14*	1.10	1.10	2.5:1	2.75	4.0:1	4.40	5.5:1	
15*	3.90	3.90	2.5:1	9.75	4.0:1	15.6	5.5:1	
16*	1.40	1.40	2.5:1	3.50	4.0:1	5.60	5.5:1	
17*	0.40	0.40	1.5:1	0.06	2.0:1	0.80	3.0:1	
22**	0.21	0.21	1.5:1	0.315	2.0:1	0.42	5.5:1	1.155
23**	1.54	1.54	2.5:1	3.85	4.0:1	6.16	5.5:1	8.47
24**	1.04	1.04	2.5:1	2.60	4.0:1	4.16	5.5:1	5.72
29*	0.60	0.60	2.5:1	1.5	4.0:1	2.40	5.5:1	
30**	1.22	1.22	2.5:1	3.05	4.0:1	4.88	5.5:1	6.71
38*	0.03	0.03	1.5:1	0.045	2.0:1	0.06	3.0:1	
39*	0.16	0.16	1.5:1	0.24	2.0:1	0.32	3.0:1	
43*	0.26	0.26	1.5:1	0.39	2.0:1	0.52	3.0:1	
44*	0.62	0.62	2.5:1	1.55	4.0:1	2.48	5.5:1	
45*	0.16	0.16	1.5:1	0.24	2.0:1	0.32	3.0:1	
46*	1.60	1.60	2.5:1	4.0:1	4.0:1	6.40	5.5:1	
47*	4.81	4.81	2.5:1	12.02	4.0:1	19.24	5.5:1	
48*	2.75	2.75	2.5:1	6.875	4.0:1	11.0	5.5:1	
49*	0.30	0.30	1.5:1	0.45	2.0:1	0.06	3.0:1	
50*	1.22	1.22	2.5:1	3.05	4.0:1	4.88	5.5:1	
51*	5.00	5.00	2.5:1	12.50	4.0:1	20.0	5.5:1	
Totals				71.445		114.10		

*Farmed Wetlands (Total 24.46 Acres)

**Non-Farmed Wetlands (Total 5.31 Acres)